# *Project Baseline Summary Report*

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Oak Ridge** Print Date: **3/9/2000**

Site Summary Level: **Portsmouth Gaseous Diffusion Plant** HQ ID: **0146**

Project **OR-623 / Portsmouth Remedial Action**

## General Project Information

### Project Description Narratives

**Purpose, Scope, and Technical Approach:**

PURPOSE:
This project, along with OR-643 will complete the DOE portion of the Environmental Restoration Program for the site. Additional Environmental Restoration will likely be required following cessation of plant operations and decontamination and decommissioning of the plant. However, this cleanup is beyond the scope of this PBS. This Life Cycle Baseline (LCB) will also accomplish the completion of assessments, corrective measures studies and decision documents for all applicable release sites in accordance with regulatory requirements.

SCOPE:
a) Complete facility investigations, environmental assessments, interim actions, and corrective measures studies leading to a decision document for all release sites.

b) Complete corrective measures implementations, solid waste closures, and above ground and below ground tank remediations, all in compliance with regulatory direction.

TECHNICAL APPROACH:
Cleanup will be in accordance with decisions reached under the Regulatory Authority of the Consent Decree and Consent Order which directs the RCRA Corrective Action process for the site, in compliance with both RCRA and CERCLA regulations. Under that process, a Corrective Measures Study will develop cleanup alternatives for each site, which requires action. The regulators will then select the preferred alternative for Corrective Measures Implementation.

Remediation technologies will be selected that satisfy remediation goals, are technically feasible, and minimize the Life Cycle Cost for the project. Remediation technologies are listed below in decreasing order or preference:

In-Situ Treatment with the emphasis on Waste Minimization
Waste Isolation via multilayer cap, subsurface barriers, etc.
Removal action with Treatment/disposal of the waste.

ASSUMPTIONS:
The Portsmouth Gaseous Diffusion Plant is operational through completion of this project, and decontamination and decommissioning of facilities is covered under another project.

The X-770 facility will successfully transition into the decontamination and decommissioning program.

Only those contaminated sites and facilities currently in the Environmental Restoration Program as defined by the release site database and regulatory documentation are considered.

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## Project Description Narratives

The primary regulatory framework for Portsmouth contaminated sites and facilities will be RCRA and CERCLA.

Groundwater and surface water will be remediated to a level appropriate for its intended use consistent with land use as determined through the RCRA and CERCLA processes.

Soil contamination will be remediated to a level consistent with land use as determined through the RCRA and CERCLA processes.

For risk calculations, a residential receptor is located at the worst case DOE property boundary. Recreational receptors are located on the reservation outside of the limited access area.

Major sources of on-site contamination are contained and/or remediated. The emphasis is on sources that have a future potential to affect offsite residents, the ecology, or on-site workers. Stakeholder discussions to date have resulted in the identification of preferred options to maintain industrial land use within the security fenced area and mixed industrial/commercial and potentially recreational land use within those areas of the federal reservation outside the security fence.

Remediation goals for the upper most water bearing unit under the site will be selected with consideration of natural background levels, technical practicability of cleanup, and ALARA criteria.

According to the PCB position paper, the temporary cleanup goal for PORTS is 25 ppm as cited by TSCA, CERCLA and OEPA Voluntary Action Program. Outside perimeter road, but on the DOE reservation, the preliminary cleanup goal should be consistent with the OEPA Voluntary Action Program for commercial property, which is 1 ppm. Both OEPA and USEPA have approved this position paper.

Results from pilot studies will be applicable to all quadrants.

Minimal cleanup of "metals" in soils and sediments is required
No requirement to cleanup "PAHs" prior to plant D&D is required.

Radiological contaminants are remediated to ALARA cleanup levels.

Once groundwater treatment facilities meet the regulated requirements for groundwater, the groundwater treatment facilities will be abandoned in place awaiting final decontamination and decommissioning of the plant.

**Project Status in FY 2006:**

Corrective Actions will be ongoing at X-114A and X230J6. All other sites are complete and there will be deed restrictions on many of the completed sites. Surveillance & Maintenance (S&M) and Groundwater activities found in PBS OR-643, Portsmouth S&M, will be ongoing.

**Post-2006 Project Scope:**

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Project **OR-623 / Portsmouth Remedial Action**

## Project Description Narratives

Corrective actions will be ongoing at X-114A and X-230J6. S&M and Groundwater activities found in PBS OR-643 Portsmouth S&M.

**Project End State**

The gaseous diffusion plant will be undergoing D&D. All Corrective Actions will have been implemented: groundwater treatment systems will be in place and
operational; a waste storage facility will be established on-site to manage wastes generated by D&D operations; landfills and burial grounds will be hydrologically isolated and left in place.

**Cost Baseline Comments:**

The estimate is based on conceptual design bills of material (BMs) prepared by each participating design discipline. The craft or crafts that will perform the tasks are identified and the appropriate wage rates are applied. Material and labor pricing is based on current vendor quotes, recent similar job history, LMES Company Stores Catalog, the U.S. Army Corp of Engineer's Computer Aided Cost Estimating Systems pricing data base, and nationally recognized databases such as R. S. Means Construction Cost Data, R. S. Means Environmental Cost Handling Options and Solutions, and Richardson's Construction Estimating Standards. Special equipment costs were obtained either by vendor contact or data from similar projects. Cost estimate rates are based on PORTS AES Standard Value File SBL1968A.VAL dated July 17, 1998.

This estimate is based on the historic cost for corrective actions at the site, and the direct and indirect costs for Construction Management and Construction Fixed Price Subcontracts.

**Safety & Health Hazards:**

DOE is committed to achieving compliance with laws, regulations, and agreements that protect human health and the environment and is focusing its resources to assess and cleanup inactive waste sites and facilities, to enhance safe and effective waste management operations, to emphasize waste minimization, and to coordinate applied waste research and development (R&D) programs. Safety First is the M&I Contractor core value and is fundamental to every work activity. All accidents are preventable and the contractor strives to achieve "Zero Accident" performance on all jobs. Safety is everyone's responsibility that includes worksite safety, safety of fellow workers, personal safety, public safety, and protection of the environment.

Safety and health-related hazards associated with Environmental Management activities at the Portsmouth Gaseous Diffusion Plant (PORTS) are those related to radiological contamination, hazardous chemicals, and physical trauma. Without proper controls, workers, the public, and the environment may be exposed to these categories of hazards during the completion of remediation, construction, maintenance, or operational responsibilities.

**Safety & Health Work Performance:**

Wide ranges of formal and informal processes are in place for identification and analysis of the hazards associated with performing work at PORTS. These processes range from formal, detailed analytical hazard analysis, to informal pre-job assessments by the individuals actually performing the work. Programs exist which require specific hazard identification and analysis for each facility at PORTS.

The Integrated Safety Management Process describes the process for implementing Savety and Health (S&H) for Environmental Management (EM) activities at PORTS.

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Project **OR-623 / Portsmouth Remedial Action**

## Project Description Narratives

A set of Work Smart Standards has been established and is contractually binding for all Environmental Management activities performed at PORTS. A multi-discipline team of managers, hourly workers, and S&H professionals determined applicable standards. All known existing hazards were considered and applicable standards were selected from federal, state, DOE, and national consensus standards and requirements.

Specific S&H disciplines (e.g., Facility Safety, Fire Protection, and Industrial Hygiene) maintain established, individual programs for addressing hazards within their particular areas of expertise.

Various processes exist at all levels for ensuring that work has been properly planned and authorized before it is begun. Complex, large-scale activities may be subjected to formal Operational Readiness Reviews, while routine, low-hazard tasks receive less formal analysis. Different S&H discipline programs to ensure operational readiness (e.g., Facility Safety - Unresolved Safety Question Determination). Computerized work planning processes assist planners in considering/addressing the entire range of safety and health hazards associated with work at PORTS. The workers perform the final readiness check as they examine the equipment, permits, and conditions of the worksite immediately prior to beginning work.

Workers also continually remain alert to changing conditions and unidentified hazards as the jobs progress. They are expected to bring issues to the attention of their supervisor. Trained S&H professionals provide field oversight of EM program activities and are alert for unforseen hazards as well.

The processes for addressing feedback and for continually improving S&H programs and activities are integral parts of the Integrated Safety Management System Process and are integral parts of the Project Delivery Process, which governs all EM activities at PORTS. Feedback received from external assessments, self-assessments, the lessons learned program, incident investigations, formally submitted employee concerns, and from day-to-day interaction with employees is given appropriate consideration. Based on information (feedback) from those sources, corrective actions are initiated with the goal of continually improving the safety and health of the public and employees.

**PBS Comments:**

**Baseline Validation Narrative:**

The Oak Ridge Operations Office Environmental Management Life Cycle Baseline (LCB) was submitted by the Managing and Integrating Contractor, Bechtel Jacobs Company LLC, to DOE-ORO on April 1, 1999. The final draft LCB will be submitted to DOE-ORO on June 1, 1999 after formal receipt and incorporation of comments. A validation of the baseline is in process using an independent contractor to DOE-ORO. The validation will be ongoing until complete and the final validation report is scheduled to be issued on June 25, 1999.

## General PBS Information

| | |
|---|---|
| **Project Validated?** | **Date Validated:** |
| **Has Headquarters reviewed and approved project?** | No |
| **Date Project was Added:** | 3/10/1999 |

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Project **OR-623 / Portsmouth Remedial Action**

## General PBS Information

**Baseline Submission Date:** 7/1/1999

**FEDPLAN Project?** Yes

| **Drivers:** | **CERCLA** | **RCRA** | **DNFSB** | **AEA** | **UMTRCA** | **State** | **DOE Orders** | **Other** |
|---|---|---|---|---|---|---|---|---|
| | Y | Y | N | N | N | Y | Y | Y |

## Project Identification Information

**DOE Project Manager:** Melda Rafferty

**DOE Project Manager Phone Number:** 740-897-5521

**DOE Project Manager Fax Number:** 740-897-3572

**DOE Project Manager e-mail address:** qp4@cosmail4.ctd.ornl.gov

**Is this a High Visibility Project (Y/N):**

## Planning Section

### Baseline Costs (in thousands of dollars)

| | **1997-2006 Total** | **2007-2070 Total** | **1997-2070 Total** | **1997** | **Actual 1997** | **1998** | **Actual 1998** | **1999** | **2000** | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PBS Baseline (current year dollars) | 131,286 | 1,636 | 132,922 | 7,619 | 9,999 | 7,501 | 10,245 | 11,030 | 13,002 | 54,094 | 17,273 | 7,969 | 3,797 | 5,218 | 3,783 |
| PBS Baseline (constant 1999 dollars) | 125,638 | 1,385 | 127,023 | 7,619 | 9,999 | 7,501 | 10,245 | 11,030 | 12,735 | 51,892 | 16,229 | 7,333 | 3,422 | 4,606 | 3,271 |
| PBS EM Baseline (current year dollars) | 131,286 | 1,636 | 132,922 | 7,619 | 9,999 | 7,501 | 10,245 | 11,030 | 13,002 | 54,094 | 17,273 | 7,969 | 3,797 | 5,218 | 3,783 |
| PBS EM Baseline (constant 1999 dollars) | 125,638 | 1,385 | 127,023 | 7,619 | 9,999 | 7,501 | 10,245 | 11,030 | 12,735 | 51,892 | 16,229 | 7,333 | 3,422 | 4,606 | 3,271 |

| **2007** | **2008** | **2009** | **2010** | **2011-2015** | **2016-2020** | **2021-2025** | **2026-2030** | **2031-2035** | **2036-2040** | **2041-2045** | **2046-2050** | **2051-2055** | **2056-2060** | **2061-2065** | **2066-2070** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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| | 2007 | 2008 | 2009 | 2010 | 2011-2015 | 2016-2020 | 2021-2025 | 2026-2030 | 2031-2035 | 2036-2040 | 2041-2045 | 2046-2050 | 2051-2055 | 2056-2060 | 2061-2065 | 2066-2070 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PBS Baseline (current year dollars) | 1,636 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PBS Baseline (constant 1999 dollars) | 1,385 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PBS EM Baseline (current year dollars) | 1,636 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PBS EM Baseline (constant 1999 dollars) | 1,385 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

### Baseline Escalation Rates

| 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00% | 0.00% | 0.00% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% |

| 2010 | 2011-2015 | 2016-2020 | 2021-2025 | 2026-2030 | 2031-2035 | 2036-2040 | 2041-2045 | 2046-2050 | 2051-2055 | 2056-2060 | 2061-2065 | 2066-2070 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% | 2.10% |

## Project Reconciliation

### Project Completion Date Changes:

**Previously Projected End Date of Project:**

**Current Projected End Date of Project:** 9/30/2007

**Explanation of Project Completion Date Difference (if applicable):**

### Project Cost Estimates (in thousands of dollars)

**Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):**

**Actual 1997 Cost:** 9,999

**Actual 1998 Cost:** 10,245

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## Project Reconciliation

| | | | |
|---|---|---|---|
| **Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):** | -20,244 | **Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):** | -547 |
| **Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):** | -20,791 | | |

## Project Cost Changes

| | Cost Adjustments | Reconciliation Narratives |
|---|---|---|
| **Cost Change Due to Scope Deletions (-):** | | |
| **Cost Reductions Due to Efficiencies (-):** | | |
| **Cost Associated with New Scope (+):** | | |
| **Cost Growth Associated with Scope Previously Reported (+):** | | |
| **Cost Reductions Due to Science & Technology Efficiencies (-):** | | |
| **Subtotal:** | -20,791 | |
| **Additional Amount to Reconcile (+):** | 132,694 | |
| **Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):** | **111,903** | |

## Milestones

| Milestone/Activity | Field Milestone Code | Original Date | Baseline Date | Legal Date | Forecast Date | Actual Date | EA | DNFSB | Mgmt. Commit. | Key Decision | Intersite |
|---|---|---|---|---|---|---|---|---|---|---|---|
| QI CMI 5-UNIT INSTALLATION :: 5-UNIT CONSTRUCTION START | OR623-001 | | 5/4/2001 | 8/25/2000 | | | Y | | | | |
| Sitewide Assessments - CMS Report :: SUBMIT QII FINAL CMS REPORT TO AGENCIES | OR623-002 | | 10/15/1999 | 10/15/1999 | | | Y | | | | |
| Sitewide Assessments - CMS Report :: QUAD I NOTICE OF AWARD | OR623-004 | | 3/1/2000 | 3/1/2000 | | | Y | | | | |
| QI CMI WORK PLAN REPORT :: SUBMIT FINAL CMI WORK PLAN TO AGENCIES | OR623-005 | | 6/1/2001 | | | | | | | | |
| QI CMI 5-UNIT INSTALLATION :: 5-UNIT CONSTRUCTION COMPLETE | OR623-006 | | 7/3/2001 | 12/12/2000 | | | Y | | | | |

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**Milestones**

| Milestone/Activity | Field Milestone Code | Original Date | Baseline Date | Legal Date | Forecast Date | Actual Date | EA | DNFSB | Mgmt. Commit. | Key Decision | Intersite |
|---|---|---|---|---|---|---|---|---|---|---|---|
| QI CMI X-231A SOIL INSTALLATION :: X-231A CONSTRUCTION START | OR623-007 | | 4/25/2001 | 6/14/2000 | | | Y | | | | |
| QI CMI X-231A SOIL INSTALLATION :: X-231A CONSTRUCTION COMPLETE | OR623-008 | | 8/23/2001 | 10/11/2000 | | | Y | | | | |
| QI CMI X-231B SOIL INSTALLATION :: X-231B CONSTRUCTION START | OR623-009 | | 4/25/2001 | 6/14/2000 | | | Y | | | | |
| QI CMI X-231B SOIL INSTALLATION :: X-231B CONSTRUCTION COMPLETE | OR623-010 | | 8/23/2001 | 10/11/2000 | | | Y | | | | |
| QI CMI X-749/X-120 GW INSTALLATION :: X-749/120 GW CONSTRUCTION START | OR623-011 | | 5/7/2001 | 9/7/2000 | | | Y | | | | |
| QI CMI X-749/X-120 GW INSTALLATION :: X-749/120 GW CONSTRUCTION COMPLETE | OR623-012 | | 7/9/2001 | 11/22/2000 | | | Y | | | | |
| QI X-3001 UST'S CMI INSTALLATION :: X-3001 UST'S CONSTRUCTION START | OR623-013 | | 7/7/2000 | 6/9/2000 | | | Y | | | | |
| QI X-3001 UST'S CMI INSTALLATION :: X-3001 UST'S CONSTRUCTION COMPLETE | OR623-014 | | 8/17/2000 | 7/31/2000 | | | Y | | | | |
| QII CMI WORK PLAN REPORT :: SUBMIT QII FINAL CMI WORK PLAN TO AGENCIES | OR623-015 | | 11/15/2001 | 11/10/2000 | | | Y | | | | |
| QII X-701B SOIL CMI INSTALLATION :: X-701B SOIL CMI CONSTRUCTION START | OR623-016 | | 8/15/2001 | 10/2/2000 | | | Y | | | | |
| QII X-701B SOIL CMI INSTALLATION :: X-701B SOIL CMI CONSTRUCTION COMPLETE | OR623-017 | | 6/18/2002 | 6/14/2002 | | | Y | | | | |
| QII X-744 Y/G SOIL CMI INSTALLATION :: X-744Y/G CMI CONSTRUCTION START | OR623-018 | | 3/27/2001 | 7/13/2000 | | | Y | | | | |
| QII X-744 Y/G SOIL CMI INSTALLATION :: X-744Y/G CMI CONSTRUCTION COMPLETE | OR623-019 | | 7/27/2001 | 12/28/2000 | | | Y | | | | |
| QII X-701B GROUNDWATER CMI INSTALLATION :: X-701B GW CONSTRUCTION START | OR623-020 | | 4/30/2001 | 8/14/2000 | | | Y | | | | |

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HQ ID: **0146**

Project **OR-623 / Portsmouth Remedial Action**

## Milestones

| Milestone/Activity | Field Milestone Code | Original Date | Baseline Date | Legal Date | Forecast Date | Actual Date | EA | DNFSB | Mgmt. Commit. | Key Decision | Intersite |
|---|---|---|---|---|---|---|---|---|---|---|---|
| QII X-701B GROUNDWATER CMI INSTALLATION :: X-701B GW CONSTRUCTION COMPLETE | OR623-021 | | 8/3/2001 | 11/28/2000 | | | Y | | | | |
| QII 7 UNIT GROUNDWATER CMI INSTALLATION :: 7-UNIT GW CONSTRUCTION START | OR623-022 | | 3/21/2001 | 6/13/2000 | | | Y | | | | |
| QII 7 UNIT GROUNDWATER CMI INSTALLATION :: 7-UNIT GW CONSTRUCTION COMPLETE | OR623-023 | | 7/25/2001 | 1/2/2001 | | | Y | | | | |
| QII X-633 SOIL CMI INSTALLATION :: X-633 CONSTRUCTION START | OR623-024 | | 4/3/2001 | 2/22/2000 | | | Y | | | | |
| QII X-633 SOIL CMI INSTALLATION :: X-633 CONSTRUCTION COMPLETE | OR623-025 | | 5/16/2001 | 4/3/2000 | | | Y | | | | |
| QII X-701C RISK REDUCTION INSTALLATION :: X-701C CONSTRUCTION START | OR623-026 | | 2/21/2000 | 4/17/2000 | | | Y | | | | |
| QII X-701C RISK REDUCTION INSTALLATION :: X-701C CONSTRUCTION COMPLETE | OR623-027 | | 6/13/2000 | 9/7/2000 | | | Y | | | | |
| QIII X-74QIII X-740 CMI INSTALLATION :: X-740 CMI CONSTRUCTION COMPLETE | OR623-028 | | 10/21/1999 | 11/19/1999 | | | Y | | | | |
| Portsmouth Remedial Action Project Start | OR623-029 | | 10/1/1996 | | | | | | | | |
| Portsmouth Remedial Action Project Completion | OR-623-030 | | 9/30/2007 | | | | | | | | |
| Portsmouth Remedial Action Mission Completion | OR-623-031 | | 9/30/2007 | | | | | | | | |

## Milestones - Part II

| Milestone/Activity | Field Milestone Code | Critical Decision | Critial Closure Path | Project Start | Project End | Mission Complete | Tech Risk | Work Scope Risk | Intersite Risk | Cancelled | Milestone Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| QI CMI 5-UNIT INSTALLATION :: 5-UNIT CONSTRUCTION START | OR623-001 | | | | | | | | | | 5-UNIT CONSTRUCTION START |
| Sitewide Assessments - CMS Report :: SUBMIT QII FINAL | OR623-002 | | Y | | | | 1 | 1 | 1 | | SUBMIT QII FINAL CMS REPORT TO AGENCIES |

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**Milestones - Part II**

| Milestone/Activity | Field Milestone Code | Critical Decision | Critial Closure Path | Project Start | Project End | Mission Complete | Tech Risk | Work Scope Risk | Intersite Risk | Cancelled | Milestone Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CMS REPORT TO AGENCIES | | | | | | | | | | | |
| Sitewide Assessments - CMS Report :: QUAD I NOTICE OF AWARD | OR623-004 | | | | | | | | | | QUAD I NOTICE OF AWARD |
| QI CMI WORK PLAN REPORT :: SUBMIT FINAL CMI WORK PLAN TO AGENCIES | OR623-005 | | Y | | | | 1 | 1 | 1 | | SUBMIT FINAL CMI WORK PLAN TO AGENCIES |
| QI CMI 5-UNIT INSTALLATION :: 5-UNIT CONSTRUCTION COMPLETE | OR623-006 | | | | | | | | | | 5-UNIT CONSTRUCTION COMPLETE |
| QI CMI X-231A SOIL INSTALLATION :: X-231A CONSTRUCTION START | OR623-007 | | | | | | | | | | X-231A CONSTRUCTION START |
| QI CMI X-231A SOIL INSTALLATION :: X-231A CONSTRUCTION COMPLETE | OR623-008 | | | | | | | | | | X-231A CONSTRUCTION COMPLETE |
| QI CMI X-231B SOIL INSTALLATION :: X-231B CONSTRUCTION START | OR623-009 | | | | | | | | | | X-231B CONSTRUCTION START |
| QI CMI X-231B SOIL INSTALLATION :: X-231B CONSTRUCTION COMPLETE | OR623-010 | | | | | | | | | | X-231B CONSTRUCTION COMPLETE |
| QI CMI X-749/X-120 GW INSTALLATION :: X-749/120 GW CONSTRUCTION START | OR623-011 | | | | | | | | | | X-749/120 GW CONSTRUCTION START |
| QI CMI X-749/X-120 GW INSTALLATION :: X-749/120 GW CONSTRUCTION COMPLETE | OR623-012 | | | | | | | | | | X-749/120 GW CONSTRUCTION COMPLETE |
| QI X-3001 UST'S CMI | OR623-013 | | | | | | | | | | X-3001 UST'S CONSTRUCTION |

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Project **OR-623 / Portsmouth Remedial Action**

**Milestones - Part II**

| Milestone/Activity | Field Milestone Code | Critical Decision | Critial Closure Path | Project Start | Project End | Mission Complete | Tech Risk | Work Scope Risk | Intersite Risk | Cancelled | Milestone Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INSTALLATION :: X-3001 UST'S CONSTRUCTION START | | | | | | | | | | | START |
| QI X-3001 UST'S CMI INSTALLATION :: X-3001 UST'S CONSTRUCTION COMPLETE | OR623-014 | | | | | | | | | | X-3001 UST'S CONSTRUCTION COMPLETE |
| QII CMI WORK PLAN REPORT :: SUBMIT QII FINAL CMI WORK PLAN TO AGENCIES | OR623-015 | | Y | | | | 1 | 1 | 1 | | SUBMIT QII FINAL CMI WORK PLAN TO AGENCIES |
| QII X-701B SOIL CMI INSTALLATION :: X-701B SOIL CMI CONSTRUCTION START | OR623-016 | | | | | | | | | | X-701B SOIL CMI CONSTRUCTION START |
| QII X-701B SOIL CMI INSTALLATION :: X-701B SOIL CMI CONSTRUCTION COMPLETE | OR623-017 | | | | | | | | | | X-701B SOIL CMI CONSTRUCTION COMPLETE |
| QII X-744 Y/G SOIL CMI INSTALLATION :: X-744Y/G CMI CONSTRUCTION START | OR623-018 | | | | | | | | | | X-744Y/G CMI CONSTRUCTION START |
| QII X-744 Y/G SOIL CMI INSTALLATION :: X-744Y/G CMI CONSTRUCTION COMPLETE | OR623-019 | | | | | | | | | | X-744Y/G CMI CONSTRUCTION COMPLETE |
| QII X-701B GROUNDWATER CMI INSTALLATION :: X-701B GW CONSTRUCTION START | OR623-020 | | | | | | | | | | X-701B GW CONSTRUCTION START |
| QII X-701B GROUNDWATER CMI INSTALLATION :: X-701B GW CONSTRUCTION COMPLETE | OR623-021 | | | | | | | | | | X-701B GW CONSTRUCTION COMPLETE |
| QII 7 UNIT GROUNDWATER CMI INSTALLATION :: 7-UNIT | OR623-022 | | | | | | | | | | 7-UNIT GW CONSTRUCTION START |

# *Project Baseline Summary Report*

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Oak Ridge** Print Date: **3/9/2000**

Site Summary Level: **Portsmouth Gaseous Diffusion Plant** HQ ID: **0146**

Project **OR-623 / Portsmouth Remedial Action**

## Milestones - Part II

| Milestone/Activity | Field Milestone Code | Critical Decision | Critial Closure Path | Project Start | Project End | Mission Complete | Tech Risk | Work Scope Risk | Intersite Risk | Cancelled | Milestone Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GW CONSTRUCTION START | | | | | | | | | | | |
| QII 7 UNIT GROUNDWATER CMI INSTALLATION :: 7-UNIT GW CONSTRUCTION COMPLETE | OR623-023 | | | | | | | | | | 7-UNIT GW CONSTRUCTION COMPLETE |
| QII X-633 SOIL CMI INSTALLATION :: X-633 CONSTRUCTION START | OR623-024 | | | | | | | | | | X-633 CONSTRUCTION START |
| QII X-633 SOIL CMI INSTALLATION :: X-633 CONSTRUCTION COMPLETE | OR623-025 | | | | | | | | | | X-633 CONSTRUCTION COMPLETE |
| QII X-701C RISK REDUCTION INSTALLATION :: X-701C CONSTRUCTION START | OR623-026 | | | | | | | | | | X-701C CONSTRUCTION START |
| QII X-701C RISK REDUCTION INSTALLATION :: X-701C CONSTRUCTION COMPLETE | OR623-027 | | | | | | | | | | X-701C CONSTRUCTION COMPLETE |
| QIII X-74QIII X-740 CMI INSTALLATION :: X-740 CMI CONSTRUCTION COMPLETE | OR623-028 | | | | | | | | | | X-740 CMI CONSTRUCTION COMPLETE |
| Portsmouth Remedial Action Project Start | OR623-029 | | | Y | | | | | | | Project Start |
| Portsmouth Remedial Action Project Completion | OR-623-030 | | | | Y | | | | | | Project Completion |
| Portsmouth Remedial Action Mission Completion | OR-623-031 | | | | | Y | | | | | |

## Performance Measure Metrics

| Category/Subcategory | Units | 1997-2006 Total | 2007-2070 Total | 1997-2070 Total | Actual Pre-1997 | Planned 1997 | Actual 1997 | Planned 1998 | Planned 1999 | Planned 2000 | Planned 2001 | Planned 2002 | Planned 2003 | Planne 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

# *Project Baseline Summary Report*

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Oak Ridge** Print Date: **3/9/2000**

Site Summary Level: **Portsmouth Gaseous Diffusion Plant** HQ ID: **0146**

Project **OR-623 / Portsmouth Remedial Action**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RS** | | | | | | | | | | | | | |
| **Assess.** | NR | 16.00 | 0.00 | 16.00 | | 1.00 | 1.00 | | 5.00 | 10.00 | | | |
| **RS** | | | | | | | | | | | | | |
| **Cleanup** | NR | 14.00 | 2.00 | 16.00 | | | | | 2.00 | | 10.00 | 1.00 | |
| **MLLW** | | | | | | | | | | | | | |
| **Comm. Disp.** | M3 | 39.00 | 44.00 | 83.00 | | | | | 25.00 | 0.00 | 2.00 | 2.00 | 4.00 | 2.( |
| **Rem. Waste** | | | | | | | | | | | | | |
| **Disposed** | M3 | 3,273.00 | 2,908.00 | 6,181.00 | | | | | 161.00 | 2.00 | 2.00 | 2.00 | 99.00 | 81.( |
| **Tech.** | | | | | | | | | | | | | |
| **Deployed** | Ntd | 2.00 | 0.00 | 2.00 | | | | | 2.00 | | | | |

| **Category/Subcategory** | **Units** | **Planned 2004** | **Planned 2005** | **Planned 2006** | **Planned 2007** | **Planned 2008** | **Planned 2009** | **Planned 2010** | **Planned 2011 - 2015** | **Planned 2016 - 2020** | **Planned 2021 - 2025** | **Planned 2026 - 2030** | **Planned 2031 - 2035** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RS** | | | | | | | | | | | | | |
| **Assess.** | NR | | | | | | | | | | | | |
| **RS** | | | | | | | | | | | | | |
| **Cleanup** | NR | | | 1.00 | 2.00 | | | | | | | | |
| **MLLW** | | | | | | | | | | | | | |
| **Comm. Disp.** | M3 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 9.00 | 9.00 | 9.00 | 9.00 | |
| **Rem. Waste** | | | | | | | | | | | | | |
| **Disposed** | M3 | 81.00 | 31.00 | 2,895.00 | 2,866.00 | 2.00 | 2.00 | 2.00 | 9.00 | 9.00 | 9.00 | 9.00 | |
| **Tech.** | | | | | | | | | | | | | |
| **Deployed** | Ntd | | | | | | | | | | | | |

| **Category/Subcategory** | **Units** | **Planned 2036 - 2040** | **Planned 2041 - 2045** | **Planned 2046 - 2050** | **Planned 2051 - 2055** | **Planned 2056 - 2060** | **Planned 2061 - 2035** | **Planned 2066 - 2070** | **Exceptions** | **Lifecycle Total** |
|---|---|---|---|---|---|---|---|---|---|---|

# *Project Baseline Summary Report*

Data Source: **EM CDB**

Report Number: **GEN-01b**

Operations/Field Office: **Oak Ridge**

Print Date: **3/9/2000**

Site Summary Level: **Portsmouth Gaseous Diffusion Plant**

HQ ID: **0146**

Project **OR-623 / Portsmouth Remedial Action**

| Category/Subcategory | Units | Planned 2036 - 2040 | Planned 2041 - 2045 | Planned 2046 - 2050 | Planned 2051 - 2055 | Planned 2056 - 2060 | Planned 2061 - 2035 | Planned 2066 - 2070 | Exceptions | Lifecycle Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **RS** | | | | | | | | | | |
| **Assess.** | NR | | | | | | | | 3.00 | 16.00 |
| **RS** | | | | | | | | | | |
| **Cleanup** | NR | | | | | | | | 1.00 | 16.00 |
| **MLLW** | | | | | | | | | | |
| **Comm. Disp.** | M3 | | | | | | | | | 58.00 |
| **Rem. Waste** | | | | | | | | | | |
| **Disposed** | M3 | | | | | | | | | 6,020.00 |
| **Tech.** | | | | | | | | | | |
| **Deployed** | Ntd | | | | | | | | 1.00 | 2.00 |

## Release Sites

| Site Code | RSF ID | Change Flag | Description | Class/Subclass Name | Planned Assess. Year | Forecast Assess. Year | Actual Assess. Date | Planned Comp. Year | Forecast Comp. Year | Actual Comp. Date | Acc. Year | No Action | Comp. Status | RAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PORT | 0002 | | RAIMS Unit #2244 \ X-749 Contaminated Materials Disposal Facility/X-120 Groundwater Plume | Surface and Groundwater/Groundwater Plumes | 2000 | | | 2001 | 2001 | | 1989 | N | | Y |
| PORT | 0004 | | RAIMS Unit #2107 \ Peter Kiewit Landfill/XT-847 Warehouse | Waste/Landfills | 1997 | | 3/31/1997 | 2006 | 2006 | | 1989 | N | Approved | Y |
| PORT | 0009 | | RAIMS Unit #2155 \ X-231B Southwest Oil Biodegradation Plot | Dispersed Surface Contamination/Land Farms | 2000 | | | 2001 | 2001 | | 1989 | N | | Y |
| PORT | 0019 | | RAIMS Unit #2154 \ X-231A Southeast Oil Biodegradation Plot | Dispersed Surface Contamination/Land Farms | 2000 | | | 2001 | 2001 | | 1989 | N | | Y |
| PORT | 0022 | | RAIMS Unit #2193 \ X-633 Recirculating Cooling Water Pump House and Cooling Towers | Spills and Leaks/Surface Spills | 2000 | | | 2001 | 2001 | | 1989 | N | | Y |

# *Project Baseline Summary Report*

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Oak Ridge** Print Date: **3/9/2000**

Site Summary Level: **Portsmouth Gaseous Diffusion Plant** HQ ID: **0146**

Project **OR-623 / Portsmouth Remedial Action**

**Release Sites**

| Site Code | RSF ID | Change Flag | Description | Class/Subclass Name | Planned Assess. Year | Forecast Assess. Year | Actual Assess. Date | Planned Comp. Year | Forecast Comp. Year | Actual Comp. Date | Acc. Year | No Action | Comp. Status | RAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PORT | 0029 | | RAIMS Unit #2102 \ Little Beaver Creek | Surface and Groundwater/Surface Water | 1999 | 2000 | 9/13/1999 | 1999 | | | 1989 | N | | Y |
| PORT | 0034 | | RAIMS Unit #2234 \ X-744Y Storage Yard and X-744G Bulk Storage Building Soils | Spills and Leaks/Surface Spills | 2000 | | | 2001 | 2001 | | 1989 | N | Approved | Y |
| PORT | 0035 | | RAIMS Unit #2206 \ X-701B Holding Pond and Retention Basin Soils | Liquid Surface Impoundments/Holding Ponds | 2000 | | | 2002 | 2005 | | 1989 | N | Approved | Y |
| PORT | 0037 | | RAIMS Unit #2208 \ X-701C Neutralization Pit Soils | Liquid Surface Impoundments/Holding Ponds | 2000 | | | 2001 | 2001 | | 1989 | N | | Y |
| PORT | 0054 | | RAIMS Unit #2224 \ X-740 Soils and GW | Spills and Leaks/Surface Spills | 1999 | 1999 | | 1999 | 1999 | 9/30/1999 | 1989 | N | Approved | Y |
| PORT | 0064 | | RAIMS Unit #2149 \ X-230J6 Northeast Holding Pond and Secondary Oil Collection Basin | Liquid Surface Impoundments/Holding Ponds | 1999 | | | 2007 | | | 1989 | N | | Y |
| PORT | 0077 | | RAIMS Unit #2221 \ X-734 Old Sanitary Landfill; X-734A Construction Spoils Landfill; X-734B Old Construction Spoils Landfill | Waste/Landfills | 1999 | 1999 | 10/19/1998 | 2001 | 2000 | | 1989 | N | | Y |
| PORT | 0085 | | RAIMS Unit #2094 \ 5-Unit Area Groundwater Plume | Surface and Groundwater/Groundwater Plumes | 2000 | | | 2001 | 2001 | | 1989 | N | Approved | Y |
| PORT | 0086 | | RAIMS Unit #2095 \ 7-Unit Area Groundwater | Surface and Groundwater/Groundwater Plumes | 2000 | | | 2001 | 2001 | | 1989 | N | Approved | Y |
| PORT | 0123 | | RAIMS Unit #2139 \ X-114A Firing Range | Spills and Leaks/Surface Spills | 1999 | | | 2007 | | | 1989 | N | Approved | Y |
| PORT | 0155 | | RAIMS Unit #2205 \ X-701B Area Groundwater | Surface and Groundwater/Groundwa | 2000 | | | 2001 | 2001 | | 1989 | N | Approved | Y |

## Release Sites

| Site Code | RSF ID | Change Flag | Description | Class/Subclass Name | Planned Assess. Year | Forecast Assess. Year | Actual Assess. Date | Planned Comp. Year | Forecast Comp. Year | Actual Comp. Date | Acc. Year | No Action | Comp. Status | RAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ter Plumes | | | | | | | | | | |

## Technology Needs

**Site Need Code:** ORDD-01a

**Site Need Name:** Improved Characterization of Equipment, Machinery, Fabricated Metals, and Other Materials

**Focus Area Work Package ID:** DD-05 **Focus Area Work Package:** Material Recycle and Release

**Focus Area:** DDFA **Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Cost

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|
| Pipe Explorer (TM) System | 0 | |
| Ground Based Laser Induced Fluorescence Imaging | 0 | |

**Site Need Code:** ORDD-02a

**Site Need Name:** Improved Decontamination of Equipment, Machinery, Fabricated Metals, and Other Materials

**Focus Area Work Package ID:** DD-05 **Focus Area Work Package:** Material Recycle and Release

**Focus Area:** DDFA **Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Both

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|
| Gas Phase Decontamination Process for Gaseous Diffusion Equipment | 0 | |

## Technology Needs

**Site Need Code:** ORHY-01a

**Site Need Name:** Dense Non-Aqueous Phase Liquid (DNAPL) Source Characterization

**Focus Area Work Package ID:** SS-02 **Focus Area Work Package:** Barriers for Containmant and Control

**Focus Area:** SCFA **Agree with Technology Link:** N

**Benefits (Cost, Risk Reduction, Both):** Both

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|
| Innovative DNAPL Characterization Technologies | 0 | |

**Site Need Code:** ORHY-02a

**Site Need Name:** Low-Waste Volume Exploration and Monitoring

**Focus Area Work Package ID:** SS-01 **Focus Area Work Package:** Characterization, Monitoring, Modeling and Analysis

**Focus Area:** SCFA **Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Cost

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|
| Environmental Measurement While Drilling | 0 | |
| Directional Drilling | 0 | |

## Technology Needs

**Site Need Code:** ORHY-03a

**Site Need Name:** Noninvasive Technologies to Identify Leaking Utilities

**Focus Area Work Package ID:** **Focus Area Work Package:**

**Focus Area:** **Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Cost

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|

**Site Need Code:** ORHY-04a

**Site Need Name:** Volatile Organic Compound VOC) Monitoring and Detection

**Focus Area Work Package ID:** SS-01 **Focus Area Work Package:** Characterization, Monitoring, Modeling and Analysis

**Focus Area:** SCFA **Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Cost

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|
| Direct Sampling Ion Trap Mass Spectrometer System (DSITMS) | 0 | |
| In Situ Measurement of Volatile and Semi-Volatile Organic Compounds in the Subsurface | 0 | |

**Site Need Code:** ORHY-11a

**Site Need Name:** Horizontal Emplacement Technologies

**Focus Area Work Package ID:** SS-09 **Focus Area Work Package:** Access and Delivery Systems

**Focus Area:** SCFA **Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Cost

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|

## Technology Needs

| | |
|---|---|
| Directional Drilling | 0 |

**Site Need Code:** ORHY-12a

**Site Need Name:** Active In Situ Dissolved Phase Treatment Systems

**Focus Area Work Package ID:** SS-08 **Focus Area Work Package:** Saturated Zone Treatment Systems

**Focus Area:** SCFA **Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Both

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|
| Dynamic Underground Stripping | 0 | |
| Remediation of DNAPLs in Low Permeability Soils | 0 | |
| In Situ Chemical Oxidation Using Potassium Permanganate | 0 | |
| Hydrous Pyrolysis/Oxidation | 0 | |

**Site Need Code:** ORHY-13a

**Site Need Name:** Reactive Barrier Treatment Systems

**Focus Area Work Package ID:** SS-05 **Focus Area Work Package:** In Situ Reactive Treatment Barriers

**Focus Area:** SCFA **Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Both

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|
| Subsurface Barrier Emplacement | 0 | |
| Passive Reactive Barrier | 0 | |

## Technology Needs

**Site Need Code:** ORHY-14a

**Site Need Name:** Containment and In Situ Stabilization of Contaminated Sediments

**Focus Area Work Package ID:** SS-04 **Focus Area Work Package:** Long-Lived Caps

**Focus Area:** SCFA **Agree with Technology Link:** N

**Benefits (Cost, Risk Reduction, Both):** Both

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|
| Subsurface Barrier Emplacement | 0 | |
| Continuous Perimeter Containment Barrier System | 0 | |
| Verification and Monitor System for Subsurface Barrier | 0 | |
| Long-Term Surface Barriers | 0 | |

**Site Need Code:** ORHY-15

**Site Need Name:** Vapor Phase Treatment Alternatives

**Focus Area Work Package ID:** **Focus Area Work Package:**

**Focus Area:** **Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Cost

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|

## Technology Needs

**Site Need Code:** ORHY-19a

**Site Need Name:** Dense Non-Aqueous Phase Liquid (DNAPL) Source Containment

**Focus Area Work Package ID:** SS-02 **Focus Area Work Package:** Barriers for Containmant and Control

**Focus Area:** SCFA **Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Both

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|
| Subsurface Barrier Emplacement | 0 | |
| Continuous Perimeter Containment Barrier System | 0 | |
| Cement Bentonite Thin Diaphragm Wall | 0 | |

**Site Need Code:** ORHY-20a

**Site Need Name:** Dense Non-Aqueous Phase Liquid (DNAPL) Source Treatment

**Focus Area Work Package ID:** SS-08 **Focus Area Work Package:** Saturated Zone Treatment Systems

**Focus Area:** SCFA **Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Both

| Technologies | Cost Savings (in thousands of dollars) | Range of Estimate |
|---|---|---|
| Dynamic Underground Stripping | 0 | |
| Subsurface Barrier Emplacement | 0 | |
| Remediation of DNAPLs in Low Permeability Soils | 0 | |
| In Situ Chemical Oxidation Using Potassium Permanganate | 0 | |
| Bioremediation of Groundwater | 0 | |
| Hydrous Pyrolysis/Oxidation | 0 | |

# *Project Baseline Summary Report*

Data Source: **EM CDB**
Report Number: **GEN-01b**
Operations/Field Office: **Oak Ridge**
Print Date: **3/9/2000**
Site Summary Level: **Portsmouth Gaseous Diffusion Plant**
HQ ID: **0146**
Project **OR-623 / Portsmouth Remedial Action**

## Technology Deployments

| | Deployment Year | | |
|---|---|---|---|
| **Deployment Status** | **Planned** | **Forecast** | **Actual Date** |
| **Technology Name:** Dynamic Underground Stripping | | | |
| Deployment Commitment | 1999 | | 1/29/1999 |
| **Technology Name:** Hydrous Pyrolysis/Oxidation | | | |
| Deployment Commitment | 1999 | | |